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ABSTRACT

The study was made to consider cultural factors related to the acceptance or nonacceptance of farm practices. Some major conclusions were: (1) demonstrators should be in the age group 30-45, (2) reading material should be at the seventh or eighth grade level, (3) meetings should be convenient for small or disadvantaged farmers to attend, (4) neighborhoods and other locality groups should be identified, (5) recommended farm practices should be compatible with the local value systems, (6) annual work plans should be based on the needs of people, and (7) varied sources of information available should be considered. It is recommended that extension workers be provided with inservice training on how farmers accept new farm practices or ideas and that a summary of the findings and implications of farm practice diffusion research be prepared for their use. (A 138-item bibliography is included.) (Author/MS)

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A Research Summary of a Graduate Study

SOME IMPLICATIONS OF FARM PRACTICE DIFFUSION - ADOPTION RESEARCH FOR EXTENSION PROGRAM DEVELOPMENT

By
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and
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SOME IMPLICATIONS OF FARM PRACTICE DIFFUSION -
ADOPTION RESEARCH FOR EXTENSION PROGRAM DEVELOPMENT

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August 1960*

ABSTRACT

The study was made for the purpose of considering possible solutions to the problem faced by Extension workers in understanding the cultural factors related to the acceptance or non-acceptance of farm practices. The study aimed at reviewing the sum results of sociological research on farm practice adoption and translating them into a more usable and more understandable form.

A few of the major conclusions were: (1) selection of demonstrators preferably should be made in the age group 30-45, (2) preparation of reading material for Extension teaching should be aimed at near the seventh or eighth grade levels, (3) when arranging for educational meetings, extra consideration should be given small or disadvantaged farmers to make it as convenient as possible for them to attend, (4) identification of neighborhoods and other locality group audiences by Extension workers should increase agent efficiency, (5) recommended farm practices are more likely to be accepted if they are compatible with the local value systems, (6) identification and utilization of diffusion stages and adopter categories by Extension workers should help assure that annual plans of work are based on the needs of people, and (7) to insure the efficient allocation of resources, Extension workers should take into account the importance of the various sources of information available to farm people.

It was recommended that Extension workers by provided with in service training on how farmers accept new farm practices or ideas and that a summary of the findings and implications of farm practice diffusion research be prepared for their use.

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* Date of completion of an M.S. degree thesis by Krishna A. Jalihal on which this summary is based.

RESEARCH SUMMARY*

I. RATIONALE FOR THE STUDY

Extension work is teaching and it involves three main aspects: (1) the subject matter aspect, (2) the administrative aspect, and (3) the educational aspect. Various Extension methods in suitable combinations are required for success in reaching and teaching people. Thus, the efficiency of Extension workers depends on their ability to know and correctly use these methods in proper number, combination, and/or sequence.

The adoption of recommended practices by farmers is considered as one of the best available criteria for measuring the success of Extension work. There are human or cultural factors which influence the extent and rate of adoption of Extension recommended practices. An awareness of such critical factors and of their influence on the adoption of farm practices by farmers should help Extension workers choose appropriate methods.

Frequently in the history of Extension, a lack of understanding of factors related to acceptance or non-acceptance of farm practices has been observed to be a major obstacle agents must overcome. In order to identify some of the cultural factors influencing the rate of farm practice adoption, sociological research has been in progress since the early years of the Cooperative Extension Service. These research studies have uncovered valuable information holding possibly great implications for application to Extension teaching situations. Rather limited attempts have been made t summarize such results and point out their implications for Extension work.

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II PURPOSE

The purpose of the present study was to search for the cause of Extension workers' lack of understanding and information regarding factors influencing practice adoption. In more specific terms, the purposes of this study were: (1) to summarize and analyze major research findings from selected sociological studies on farm practice adoption, and (2) to identify and consider some of their implications for Extension teaching.

III. METHODOLOGY

A library method of research was conducted. Information was obtained from research publications, bibliographies, research summaries and selected unpublished material.

A concept of culture and cultural change as related to the diffusion and adoption of farm practices was developed so as to assist in the organization of the study and to make it simpler and more meaningful.

In order to serve as a useful guideline for the study, a short historical review of the relevant research work conducted in the United States was made. A classification system developed by the Sub-Committee on the Diffusion and Adoption of Farm Practices of the Rural Sociological Study was used for grouping the research findings according to major problem areas as suggested in that system. These major problem areas were:

1. The differential acceptance of farm practices as a function of status, role and motivation
2. The differential acceptance of farm practices as a function of socio-cultural systems
3. Diffusion as the study of cultural change
4. Diffusion as a problem of communication of information.

IV. SUMMARY OF FINDINGS

The summary of findings will be presented in a tabular form in hopes

that it may serve as a useful guidebook for those seeking such assistance in planning. The three column headings include: (1) Major research finding, (2) Possible application to Extension teaching, and (3) Extension method suggested. The third heading will not be used in cases where such considerations may not apply.

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
A. Differential Acceptance of Farm Practices as a Function of Status and Role of Farm Operators		
1. Status		
a. Age of the Farmer		
(1) Farmers in the age group 30-45 adopt a greater number of farm practices than those in younger or older age groups.	(1)When demonstrators are being selected, farmers in the age group 30-45 appear to be better choices than those in other groups. (2) Special educational efforts are needed for the age groups below and above 30-45 according to their special characteristics. (3) Efforts to teach young and adult farmers alike to solve their real problems such as those connected with acquisition of necessary capital or land are appealing and necessary.	(1) Farm and home visits. (2) Result demonstrations. (3) Circular letters. (4) Meetings involving motion pictures, charts and other visual aids

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
b. Education of the Farmer		
(1) Farmers having relatively higher formal education tend to adopt more farm practices than those having less formal education. (2) Most of the farmers quit from schools before entering high scale grade.	(1) Reading material to be used in Extension needs to be written near the seventh to eighth grade levels of education. (2) Increased direct contacts are necessary with farmers having had little formal education.	(1) Bulletins (2) Leaflets (3) News articles (4) Farm and home visits.
c. Farm Ownership		
(1) When a new practice promises an immediate returns, owners and tenants may not show much difference in its adoption. (2) Where an improved practice involves continued efforts overtime, and/or when an immediate return from a practice is not expected, owners tend to	(1) If tenants lag behind in the acceptance of a practice promising an immediate return, the same is likely due to factors other than ownership. (2) Tenant farmers may be somewhat more reluctant to serve as co-operators or demonstrators than owners. (3) Where an improved practice involves continued efforts over time and/or	(1) Result demonstrations (2) Test demonstrations (3) Farm and home visits (4) Personal letters

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
adopt a greater number of farm practices than non-owners.	when an immediate return from a practice is not expected, Extension work with tenants requires relatively greater simultaneous educational efforts to assist them in solving their related problems than is usually true with owners.	
d. Size of Farm		
(1) Large farmers usually adopt a greater number of farm practices than do small farmers.	(1) Small or disadvantaged farmers usually find it more difficult to participate in Extension activities than do larger farmers. (2) Educational activities should be adjusted to include consideration of their convenience. (3) Because of an adoption lag, emphasis on a long range program to suit the resources and particular needs of small or disadvantaged farmers is desirable (not to the exclusion of large or intermediate level farmers).	(1) Farm and home visits (2) Lectures and general meetings (3) Leader training meetings (4) Program planning meetings

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
e. Socio-Economic Status of the Farmer		
(1) Farmers high on the economic scale are likely to adopt more farm practices.	(1) Extension workers should identify the socio-economic status of the farmers. (2) Intensive efforts are needed to reach and teach those farmers who are found to be relatively low on the socio-economic scale.	(1) Farm and home visits (2) Office calls (3) Telephone calls (4) Meetings.
2. Role of Farmers		
a. Participation in Extension Activities and Other Farm Organizations		
(1) Farmers participating in Extension activities and other farm organizations are more likely to adopt a greater number of farm practices than non-participants. (2) Farmers who have sons or other members of the family in 4-H or in vocational agriculture in high school	(1) Extension workers need to work more closely with existing farm organizations. (2) Activities like 4-H, young farmers' organizations, and adult farmers' organizations should be developed intensively. (3) Wider participation of farmers in program planning activities needs to be encouraged.	(1) Lecture meetings (2) Leader training (3) Conferences and discussion meetings (4) Circular letters (5) Result and method demonstrations (6) Program planning meetings

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
are likely to adopt a greater number of farm practices.		
b. Leadership in Extension and Other Activities		
(1) Leadership in organized community was not found to be related to the adoption of farm practices. (2) Community adoption leaders and/or informal leaders are not necessarily innovators.	(1) Community leaders may be primarily thought of as local resource personnel. (2) Early special efforts made to sell new ideas to community adoption leaders and informal leaders increase the effectiveness of extension programs.	(1) Farm and home visits (2) Leader training meetings (3) Personal letters (4) Result demonstrations
c. Family Factors as Related to Extension Co-operation		
(1) Rationality score of farmers is a better predictor of adoption than contact with Extension. This score is a measure of decision making. Thinking, planning, and using the best available information and advice are involved in reaching decisions meant to	(1) Special educational efforts are needed to increase the rationality scores of farm people by helping them learn how to make wise decisions. (2) Advantages of farm practices should be related to the possibility of attaining farmers' goals of education for children. (3) Practices requiring high	(1) Farm and home visits (2) Office calls (3) Personal letters (4) Lectures (5) Conferences and discussion meetings

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
achieve maximum socio-economic ends (20:133). (2) High value placed on education for children may possibly be associated with the adoption of farm practices. (3) High value placed on owning debt free property retards the adoption of practices.	capital investment needs to be pushed cautiously with farmers who value debt-free property.	
d. The Influence of Neighbors, Friends and Relatives		
(1) Farm practice adoption rates will vary in different neighborhoods of the same community. (2) Generally, the degree of a farmer's dependence on neighbors, friends and relatives either increases or retards his farm practice adoption.	(1) Extension workers need to identify neighborhoods, groups and/or kinships which are in operation in local communities as a first step to getting acceptance of a practice. (2) Neighborhood leaders or informal leaders and other influential people ought to be recognized and reached first. (3) Attention should be paid	(1) Farm and home visits (2) Personal letters (3) Leader training meetings (4) Result demonstrations (5) Conferences and discussion meetings (6) News stories

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
(3) Informal groups influence farm practice adoption of community people.	to each neighborhood in educational programs if optimum diffusion is to occur.	

B. The Differential Acceptance of Farm Practices as a function of Socio-Cultural Systems

1. The Type and Amount of Leadership in the Systems

(a) The degree to which local lay leadership is involved in Extension work determines to a great extent the success of the Extension work.	(a) In areas where local leadership is not functioning, a primary concern of Extension personnel is to identify and train local lay leadership.	(a) Farm and home visits (b) Conferences and discussion meetings (c) Leader training meetings

2. The Type and Degree of Social Stratification in the Systems

(a) Neighborhoods with high social stratification are quite likely to lag behind in their adoption of farm practices.	(a) Educational programs should be designed which are suitable for use in particular situations with people in various strata.	(a) Farm and home visits (b) Written materials (c) Movies and slides (d) Method and result demonstrations

3. The Dominant Value Orientation or the Basic Themes of the Systems

(a) People in different culture systems vary in their acceptance of approved practices.	(a) Differences if any existing in the cultural value systems of communities and/or neighborhoods	(a) Farm and home visits (b) Office calls (c) Personal letters

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
These differences may be due to: (1) The nature of contact the cultural group has with the outside world. (2) Emphasis placed on security and the past or on success and the future. (3) Emphasis placed on individualism or familism. (4) Emphasis placed on material or non-material aspects of life.	should be recognized. (b) The nature of contact of cultural groups with the outside world needs to be closely studied and information channelled accordingly. (c) Types of farm practices to be recommended for a community should be compatible with and geared to the value systems of that particular culture group. (d) Methods of diffusion of farm information should be based on the attitudes and interests of local people.	(d) Lecture meetings (e) Conferences and discussion meetings
4. The Degree of Cultural Isolation of the Systems		
(a) Communities which are in closer contact with Extension workers tend to adopt greater numbers of farm practices.	(a) It is essential that the cultural group be familiar with new farm practices if they are to be successfully adopted. Thus, there is need for contacting every	(a) Farm and home visits (b) Personal letters (c) Circular letters (d) Mass media (e) Lectures

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
	local community. (b) The assistance of local lay leadership should always be used to contact the people	(f) Conferences and discussion meetings (g) Fairs
C. Diffusion as the Study of Cultural Change		
1. Stages in the Process of Diffusion		
(a) Diffusion is now considered as a dual process involving the dissemination of information and the spread of usage. (b) Practice adoption passes through an experimental stage and a trial period to full acceptance. Five stages in the process of diffusion are identified: (1) Awareness (2) Interest (3) Evaluation (4) Trial (5) Adoption	(a) Extension workers need to understand the existence of the five stages in the diffusion process because there are steps involved in Extension teaching which parallel these learning stages. These steps of teaching include: (1) Getting the attention of the potential acceptor. (2) Stimulating his interest. (3) Creating his desire for information. (4) Convincing him to act. (5) Getting his action. (b) Every Extension worker needs to have a	All methods involved, depending on the stage attained.

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
	clear concept of what constitutes Extension teaching. (c) Knowledge about the appropriate methods used in the various stages of diffusion is needed. (d) Extension workers should learn to utilize various ways for identifying people in the different stages of the diffusion process. (e) Separate files maintained in the county Extension office for the farm families in a county might indicate the diffusion stages attained by each family. (f) This information needs to be used in planning farm visits, for the selection of other methods at the time of annual planning.	
2. Categories of Adopters		
(a) The farm practice adoption curve on the number of people	(a) Extension workers need to be familiar with the characterisitics of people	(a) Farm and home visits (b) Office calls

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
accepting a practice over time follows the pattern of "Chapin's S curve"(e.g. see Figure 1): (b) Different categories of adopters can be identified according to their varying location on the diffusion curve. (c) The five categories of adopters identified include(see Figure 2): (1) Innovators (2) Early adopters or community adoption leaders (3) Early majority or informal leaders (4) Late majority (5) Non-adopters or laggards (d) Characteristics of people belonging to the various adopter cate-	belonging to various adopter categories. (b) Efforts are needed to identify people belonging to the various adopter classes. (c) In the early stages of the diffusion process more direct educational efforts with innovators, and later with early adopter groups and early majority groups should be increased: Such changing of focus permits agents to keep up with the diffusion process and accelerate it. (d) As the diffusion stages advance, less and less attention should be paid to work with the majority as it would be influenced more and more by indirect efforts. This limited attention, however should be directed toward assist-	(a) Farm and home visits (b) Office calls (c) Personal letters (d) Conferences and discussion meetings (e) Result demonstrations (f) Method demonstrations

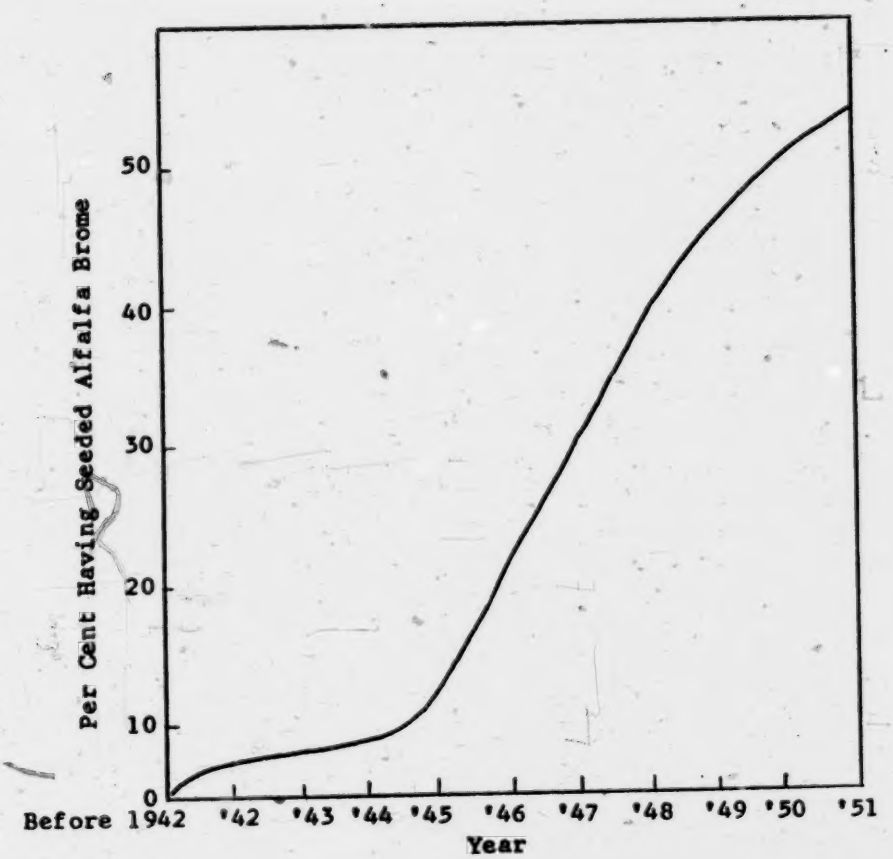

Figure 1. Cumulative Diffusion Curve on Farm Practice Adoption*

*E. A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors: Agricultural Experiment Station Research Bulletin 183 (Madison, Wisconsin: University of Wisconsin, 1953), Figure 2, p. 13.

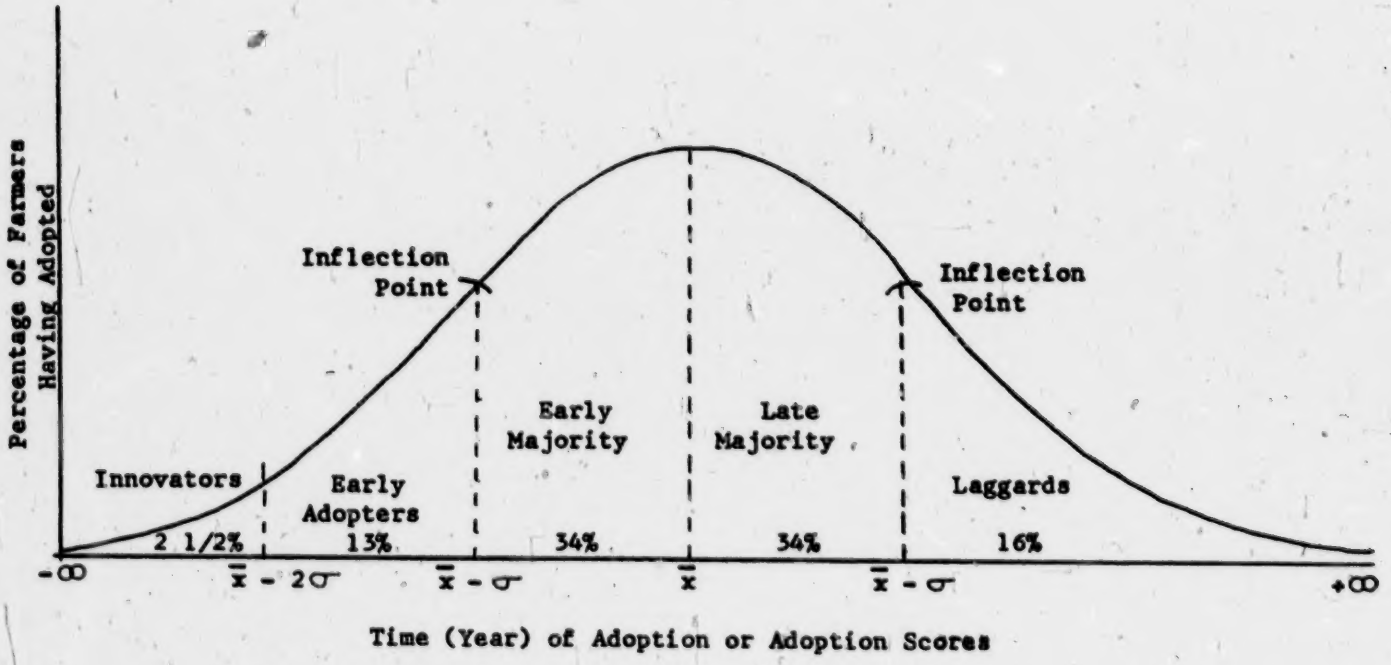

Figure 2. Adopter Categorization on the Basis of Adoption Frequency Distribution*

*E. M. Rogers and G. M. Beal, Reference Group Influence in the Adoption of Agricultural Technology, Journal Paper No. 3373 of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa. (Ames, Iowa: Iowa State College, 1958), Figure 8, p. 33.

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
gories have been recognized.	ing them to solve related problems rather then to simple creation of awareness, interest or evaluation.	
3. Rate and Process of Diffusion of Different Types of Farm Practices		
(a) The simplicity of a new practice or idea probably accounts for its quicker acceptance. (b) Familiarity with an improved practice or idea generally increases the rate of diffusion of other similar practices. (c) A practice will be accepted relatively early if it is concerned with solving the felt needs of the people.	(a) When improved practices involving greater costs are to be introduced, simultaneous efforts to assist farm people in obtaining credit and providing other facilities are necessary. (b) When recommended practices involve complexities, potential acceptors need to be trained in acquiring the necessary skill. (c) Before starting educational activities, it might be worthwhile to enlist the aid of local people to help decide whether the recommended practices really serve the felt needs of the people or not. If the negative	(a) Farm and home visits (b) Leaflets (c) Method demonstrations (d) Result demonstrations (e) Program planning meetings (f) Discussion groups

Major Research Finding	Possible Application to Extension Teaching	Extension Method Suggested
	is true, efforts spent on such activities might clearly be viewed as wasted.	

D. Diffusion as a Problem of Communication of Information

1. Extension Agents

Major Research Finding	Possible Application to Extension Teaching
(a) Contact with Extension agents largely determines the consequent adoption of recommended practices.	(a) Planning farm and home visits simply to inform farmers of new practices should be avoided except in the case of innovators.
(b) Larger farmers generally make greater use of Extension agents.	(b) Extension workers are best equipped to teach techniques involved in new practices. Method and result demonstrations should serve as appropriate methods for teaching things necessary for this job of teaching skills.
(c) The most important role of county agents is to inform people about techniques needed for putting new practices into operation.	(c) Local lay leadership should be trained and utilized to multiply the efforts of Extension workers.
(d) The second most important role of Extension workers is to help farmers in deciding whether to try out new experiences or not.	(d) Information furnished by Extension agents should supplement the information already received by farmers through mass media.
(e) Extension agents are next in importance to mass media in informing farmers of new ideas in agriculture.	

Major Research Finding	Possible Application to Extension Teaching
2. Other Farmers or Neighbors and Friends	
(a) Their major role is to act as sources of help to farmers in the decision making process. (b) Their second most important role is to assist potential acceptors in deciding when and how to put new practices into effect. (c) Their role is difficult to be substituted for.	(a) Extension workers should act with other farmers more closely. (b) Other key farmers need to be selected as demonstrators. (c) Extension agents are likely to be benefitted by training other farmers, especially when they use method demonstrations. (d) Other farmers ought to be enlisted on the mailing lists of the county offices and agricultural colleges.
3. Mass Media	
(a) Such methods are frequent sources reported for farmers' first word of new farm practices. (b) They lose their importance in the later stages of the diffusion process. (c) They often are not recognized as primary sources of new information by farmers having lower educational levels and incomes. (d) They do not furnish the "most" of the information.	(a) Liberal use of mass media as sources of new information will be economic both in respect to time and money. (b) Extension workers need to follow up and supplement the information supplied by mass media especially to furnish the "most" of the information. (c) Proper combinations of methods like discussions, demonstrations and direct contacts should be selected. (d) Limitations of mass media

Major Research Finding	Possible Application to Extension Teaching
	should be considered while working with low income farmers and appropriate supplemental methods used.
4. Commercial Sources - Salesmen and Dealers	
(a) They often indirectly contribute in the initial awareness stage as sources of first information. (b) As a direct channel, they are more influential in the trial and adoption stages, but rank below neighbors and friends and Extension agents.	(a) Extension workers ought to benifit by utilizing commercial sources. However, efforts are needed to assist salesmen and dealers so that the latter perform their job properly. (b) Commercial dealers could be enlisted on mailing lists of county Extension offices and agricultural colleges. (c) Results of successful demonstrations need to be furnished to them. (d) Commercial dealers should be invited to method and result demonstration meetings.

V. IMPLICATIONS

The following major implications for Extension teaching based on important research findings were reported in this study since they promise to encourage early farm practice adoption.

Differential acceptance of farm practices as a function of status, role and motivation

1. Farmers in the age group 30-45 appear to be better choices

than those in other groups for selection as demonstrators since they consistently appear to be earlier acceptors of farm practices.

2. Reading material to be used in Extension needs to be written at the seventh to eighth grade levels of formal education, or slightly above, if it is to communicate.
3. Where an improved practice involves continued efforts, over-time and/or when an immediate return from a practice is not expected, Extension work with tenants requires relatively greater simultaneous educational attention to their many needs than is usually true with other farmers.
4. Educational activities should be adjusted to include special consideration of the convenience of small or disadvantaged farmers because of the difficulties they face in time and money.
5. Special methods are needed to reach and teach farmers relatively low on the socio-economic scale because of their frequent defeatist attitudes and insecurity.
6. Extension workers need to work more closely with existing farm organizations and to assist farmers in starting new ones, for participation in such organizations facilitates early farm practice adoption.
7. Community leaders may be thought of primarily as local resource personnel and not necessarily as innovators. Community adoption leaders and informal leaders must be reached first if the majority group is to be expected to accept new practices.

8. Extension workers need to identify neighborhoods, groups, and kinships which are in operation in local communities as a first step toward getting acceptance of a practice. This is necessary because research has revealed that informal groups exert influences which facilitate the interpersonal exchange of farm information and encourage farm practice adoption. Use should then be made of such group leaders to get such locality groups to accept recommended farm practices.

The differential acceptance of farm practices as a function of socio-cultural systems

1. Educational programs should be designed so as to be suitable for use in particular situations with people in various social strata since groups and individuals vary from one extreme to the other.
2. Types of farm practices to be recommended for a community should be compatible with and geared to the value systems of that particular cultural group if acceptance is to be assured.
3. It is essential that the cultural group be familiar with new farm practices if they are to be successfully adopted. So familiarization programs are needed.
4. The assistance of local lay leadership should always be used to contact the people since they legitimize the activities prerequisite to the diffusion process.

Diffusion as the study of cultural change

1. Farm practice adoption passes from an experimental period through trial period to full acceptance. The five generally accepted stages in the diffusion process are: (a) Awareness,

(b) Interest, (c) Evaluation, (d) Trial, and (e) Adoption. These five stages of the diffusion process should be seen as being related to the five steps of extension teaching, namely, (a) Attention, (b) Interest, (c) Desire, (d) Conviction, and (e) Action.

2. Depending on the time taken for farm practice adoption, five categories of adopters are identified: (a) Innovators, (b) Early adopters, (c) Early majority, (d) Late majority, and Laggards. People belonging to these categories have their own characteristics and the Extension worker should learn to identify these different categories of adopters and also the particular stage of the diffusion process in which these people are. This is necessary because identification should precede selection of appropriate teaching methods. This kind of information should be considered in preparing long-range plans and annual plans of work.
3. Before starting educational activities, it might be worthwhile to enlist the aid of local people to help decide whether the recommended practices really serve their felt needs or not. This action encourages the support of local people.

Diffusion as a problem of communication of information

1. Planning farm and home visits simply to inform farmers of new practices should be avoided except in the case of innovators. Such visits with other groups will probably not be productive.
2. Information furnished by Extension agents should supplement the information already received by farmers through mass media. Thus duplication is avoided and efforts may be properly allocated.
3. One most important role of Extension workers may be to inform people about techniques needed for putting new farming practices into

operation. Liberal use of method and result demonstrations is therefore appropriate.

4. Extension workers are likely to be benefitted by training neighbors and friends who influence the majority group. This is because influential neighbors and friends help farmers in the decision making stage.
5. Liberal use of mass media to disseminate new information and create awareness and interest appears to be economical both in respect to time and money.
6. Limitations of some methods of mass media should be considered while working with low income farmers and appropriate supplemental methods selected and used.
7. Commercial dealers serve as sources of farm information and need to be used wherever practicable in order to increase the range of the agents' contact.
8. Commercial dealers should be invited to attend method and result demonstration meetings for they have been shown to be key people in their local communities.

Some of the recommendations from this study include:

1. Initiating research work to find out suitable methods of identifying neighborhoods and other locality groups.
2. Conducting further research to investigate separately the factors which have already been shown to influence the number of farm practices adopted and those which have been shown to influence their rates of adoption. This is necessary because in most studies conducted so far, the two aspects have not been studied separately.

3. Starting special inservice efforts for Extension workers to teach them how farmers accept new practices or ideas.
4. Publishing a guidebook on the findings of research on farm practice adoption for the use of Extension workers including explicit implications and suggestions for Extension teaching such as those presented in this research summary.

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